

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-35 are pending in the present application. Claims 1-4, 6, 7, 11, 12, 14-17, 19, 22 and 23 are amended and claims 24-35 are added by the present amendment.

The Office Action rejects claims 1-4 and 17 under 35 U.S.C. § 102(e) as anticipated by Sita et al.; rejects claims 5, 9, 10, 13, 18 and 21 under 35 U.S.C. § 103(a) as unpatentable over Sita et al. in view of Yonemitsu et al.; rejects claims 14, 16 and 20 under 35 U.S.C. § 103(a) as unpatentable over Sita et al. in view of Fogg; rejects claim 15 under 35 U.S.C. § 103(a) as unpatentable over Sita et al. in view of Fogg and Kim et al.; rejects claims 11, 12, 22 and 23 under 35 U.S.C. § 103(a) as unpatentable over Sita et al. in view of Kim et al.; and indicates claims 6-8 and 19 are allowable if rewritten in independent form.

Applicant thanks the Examiner for the indication of allowable subject matter.

Claims 1-4 and 17 stand rejected under 35 U.S.C. § 102(e) as anticipated by Sita et al. This rejection is respectfully traversed.

Independent claim 1 is directed to an apparatus for receiving digital motion pictures including a video display processor for carrying out (1) down-conversion by converting an extracted interlaced scanning sequence video bit stream to a field DCT coded block if the extracted video bit stream corresponds to a frame DCT coded block, and (2) carrying out a down-conversion as a field DCT coded block extracted video bit stream has a field DCT coded block.

As discussed in the Discussion of the Related Art, it is more difficult to store frame DCT coded blocks than field DCT coded blocks, because various processes and buffers are required for frame DCT coded blocks. However, the interlaced sequence includes both frame and field DCT coded blocks. In the related art, the frame and field DCT coded blocks are separately processed.

However, according to the present invention, the frame DCT block interlaced video stream is down-converted to a field DCT block, and the field DCT block is down-converted as it is to a field DCT block. Thus, according to the claimed invention, a preset field-base reference picture is obtained regardless of the input DCT types (see page 14, lines 23 and 24) and the amount of memory required is reduced.

The outstanding Office Action indicates Sita et al. discloses the claimed invention and cites Figs. 2B and 5, col. 2, lines 20+, col. 5, lines 60+ and col. 8, lines 5+. However, it is respectfully noted that Sita et al. merely describes varying data from a main profile, high level (MP@HL) to a main profile, main level (MP@ML) by using a frequency-domain filter to reduce the resolution of the MP@HL when a decoder is operated in a second mode (see the abstract). For example, Fig. 2B illustrates a DCT domain filter 216 (see also col. 10, lines 12-15) used to provide a lower resolution picture. However, Sita et al. does not teach or suggest converting a frame DCT coded video stream to a field DCT coded block as in the present invention.

Turning now to independent claim 4, which is directed to a video coding device including a down-sampling IDCT part for carrying out 4X4 inverse discrete cosine transform IDCT after removing DCT coefficients of high frequency components in horizontal/vertical directions if the inverse quantized DCT coefficient are field DCT coded data, and performing down-

sampling of a frame DCT coded data in a vertical direction in a DCT domain after removing DCT coefficients of the high frequency components in a horizontal direction to convert it to field DCT coded data if the inverse quantized DCT coefficients are the frame DCT coded data.

Thus, similar arguments apply to independent claim 4 as that discussed above with respect to independent claim 1. That is, the frame DCT coded data is also converted to field DCT coded data. As noted above, Sita et al. do not teach or suggest converting the frame DCT coded data to field DCT coded data.

Turning now to independent claim 17, which is directed to a video decoding device including an IDCT part for carrying out 8X4 IDCT after removing DCT coefficients of bottom fields and DCT coefficients of high frequency components of top fields if the inverse-quantized DCT coefficients are field DCT data of interlaced sequence, while removing DCT coefficients of high frequency components in a horizontal direction and extracting top fields only if the inverse-quantized DCT coefficients are frame DCT data.

Again, the frame DCT data is handled to reduce the amount of memory processes required (*i.e.*, DCT components of high frequency are removed in the horizontal direction and top fields only are extracted).

The outstanding Office Action applies Fig. 5 of Sita et al. as teaching removing DCT coefficients of high frequency components in horizontal/vertical directions. However, as noted above, Sita et al. does not distinguish between coding frame data and field data as the present invention. That is, Sita et al. does not teach or suggest removing DCT coefficients of high frequency components in a horizontal direction and extracting top fields only of frame DCT data.

Accordingly, it is respectfully submitted independent claims 1, 4 and 17 and each of the claims depending therefrom patentably define over Sita et al.

The only other rejected independent claim is claim 14, which was rejected under 35 U.S.C. § 103(a) as unpatentable over Sita et al. in view of Fogg. This rejection is also respectfully traversed.

Similar arguments apply to independent claim 14 as discussed above with respect to independent claims 1, 4 and 17. In more detail, independent claim 14 is directed to an apparatus for receiving digital motion pictures including a video processor for carrying out down-conversion of a frame DCT coded block and a field DCT coded block to a picture of a pixel structure based only on a top field, if the extracted video bit stream is an interlaced sequence. That is, the fixed top field-based-reference picture may be always obtained regardless of the received DCT types (see page 30, lines 16-18 and Fig. 13, for example).

The outstanding Office Action recognizes Sita et al. do not teach or suggest top or bottom fields, and relies on Fogg as teaching these features. However, Fogg does not teach or suggest performing down-conversion of a frame and field DCT coded block to a picture of a pixel structure based on only a top field.

Accordingly, it is respectfully submitted independent claim 14 and the claims depending therefrom are also allowable.

Further, it is respectfully submitted the additional rejections in the outstanding Office Action have also overcome as the claims rejected therein are dependent claims and the additional references cited do not teach or suggest the features in the independent claims.

The specification has also been amended to correct minor informalities.

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Reply Dated: April 21, 2004

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In addition, new claims 24-35 have been added to set forth the invention in a varying scope. In particular, new claims 24-35 are similar to claims 1-4 and 14-17, but are drafted in a varying scope. It is respectfully submitted the new claims are allowable for similar reasons as discussed above.

CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. Favorable consideration and prompt allowance are earnestly solicited. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney, **David A. Bilodeau**, at the telephone number listed below.

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To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
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